6. Scientific Departments Courses in the Faculty of Engineering

Each department in the faculty scientifically supervises a group of courses that belong to its field of specialization. The department is responsible to develop the course specs and follow up the reports and files of these courses.

10 Department of Basic Sciences

This department scientifically supervises the following group of courses:

Course Code	Course Name	Lec.	Tut.	Lab.	WS	Sum	Credit Hours
1001	*General Physics 1*	2	1	1	0	4	3
1002	*Engineering Mathematics 1*	2	2	0	0	4	3
1003	*Mechanics 1*	2	2	0	0	4	3
1004	*Engineering Chemistry*	2	1	1	0	4	3
1011	*General Physics 2*	2	1	1	0	4	3
1012	*Engineering Mathematics 2*	2	2	0	0	4	3
1013	*Mechanics 2*	2	2	0	0	4	3
1022	*Engineering Mathematics 3*	2	2	0	0	4	3
1027	*Social Research and Networking*	2	0	0	0	2	2
1028	*Engineering Art*	2	0	0	0	2	2
1065	*Operational Statistics*	2	2	0	0	4	3
1066	*Community Service Training*	0	0	0	6	6	2
No. of Courses in the Department: 12	***Partial Sum:***	**22**	**15**	**3**	**6**	**46**	**33**

11 Department of Electromechanics Engineering

This department scientifically supervises the following group of courses:

Course Code	Course Name	Lec.	Tut.	Lab.	WS	Sum	Credit Hours
1101	*Communications and IT*	2	0	2	0	4	3
1121	*Computer Programing*	2	1	1	0	4	3
1122	*Electrical Engineering*	2	2	0	0	4	3
1133	*Thermodaynamics*	2	1	1	0	4	3
1134	*Modelling and Simulation*	2	0	2	0	4	3
1142	*Electronic Circuits*	2	2	2	0	6	4
1143	*Sensors and Measurements*	2	0	2	0	4	3
1148	*Training in Industry 1*	1	0	0	0	1	1
1152	*Microprocessor systems*	2	0	2	0	4	3
1153	*Heat and Mass transfer*	2	1	1	0	4	3
1155	*Renewable Energy Applications*	2	2	2	0	6	4
1163	*Solar Thermal Energy Systems*	2	2	2	0	6	4
1168	*Training in Industry 2*	1	0	0	0	1	1
1171	*Aerodynamics*	2	2	0	0	4	3

1172	*Power Electronics*	2	1	1	0	4	3
1175	*Energy Auditing and Efficiency*	2	1	1	0	4	3
1182	*Electromechanical Energy*	2	2	2	0	6	4
1183	*Solar Energy in Buildings*	2	2	0	0	4	3
1187	*Energy B Sc Project 1*	2	0	2	0	4	3
1188	*Training in Industry 3*	1	0	0	0	1	1
1192	*Electrical Power Systems*	2	2	0	0	4	3
1193	*PV Technology*	2	2	2	0	6	4
1194	*Bioenergy Conversion*	2	2	0	0	4	3
1197	*Energy B Sc Project 2*	2	0	2	0	4	3
1198	*Electric Engineering*	2	2	0	0	4	3
No. of Courses in the Department:	**25**	***Partial Sum:***	**47**	**27**	**27**	**0**	**101**	**74**

12 Department of Mechatronics Engineering

This department scientifically supervises the following group of courses:

Course Code	Course Name	Lec.	Tut.	Lab.	WS	Sum	Credit Hours
1211	*Production Engineering*	2	0	0	6	8	4
1242	*Basics of Mechatronics*	2	2	2	0	6	4
1243	*Fluid mechanics*	2	2	2	0	6	4
1244	*Control Systems 1*	2	2	0	0	4	3
1248	*Training in Industry 1*	1	0	0	0	1	1
1252	*Applied Mechatronics*	2	0	2	0	4	3
1254	*Applied Control Technology*	2	2	2	0	6	4
1262	*Logic Design*	2	0	2	0	4	3
1263	*Microcontrollers and PLC*	2	2	0	0	4	3
1264	*Mechatronics System design*	2	0	2	0	4	3
1268	*Training in Industry 2*	1	0	0	0	1	1
1271	*Computer Aided Design/ CAM*	2	0	2	0	4	3
1274	*Control Systems 2*	2	1	1	0	4	3
1284	*Robotics*	2	1	1	0	4	3
1285	*Digital Control*	2	2	0	0	4	3
1287	*Mechatronics B SC Project 1*	2	0	2	0	4	3
1288	*Training in Industry of mechatronics 3*	1	0	0	0	1	1
1291	*Machines and Vibrations*	2	2	0	0	4	3
1292	*Automation Technology*	2	2	0	0	4	3
1294	*Actuators and Drives*	2	1	1	0	4	3
1294	*Robotics Control Systems*	2	2	0	0	4	3
1297	*Mechatronics B Sc Project 2*	2	0	2	0	4	3
1299	*Wind Energy Technology*	2	0	2	0	4	3
No. of Courses in the Department:	**23**	***Partial Sum:***	**43**	**21**	**23**	**6**	**93**	**67**

13 Department of Civil Engineering

This department scientifically supervises the following group of courses:

Course Code	Course Name	Lec.	Tut.	Lab.	WS	Sum	Credit Hours
1331	*Structure Analysis*	2	2	0	0	4	3
1332	*Engineering Systems*	2	0	2	0	4	3
1333	*Hydrology 1*	2	1	1	0	4	3
1344	*Basics of Water Engineering*	2	1	1	0	4	3
1345	*Water Resources Engineering*	2	0	2	0	4	3
1348	*Training in Field 1*	1	0	0	0	1	1
1351	*Reinforced Concrete 1*	2	2	2	0	6	4
1353	*Hydrology 2*	2	1	1	0	4	3
1354	*Water Engineering Project*	1	0	2	3	6	3
1355	*Hydraulics*	2	1	1	0	4	3
1361	*Material Science*	2	2	0	0	4	3
1362	*Reinforced Concrete & Steel Structure*	2	2	0	0	4	3
1364	*Plant Water Relationship in Soil*	2	2	0	0	4	3
1368	*Training in Field 2*	1	0	0	0	1	1
1374	*Sanitary Engineering*	2	1	1	0	4	3
1375	*Irrigation and Drainage Systems*	2	1	1	0	4	3
1376	*Soil Mechanics*	2	2	2	0	6	4
1381	*Reinforced Concrete 2*	2	2	2	0	6	4
1384	*Waste Water Treatment*	2	1	1	0	4	3
1385	*Irrigation Management*	2	1	1	0	4	3
1387	*Water B Sc Project 1*	2	0	2	0	4	3
1388	*Training in Field 3*	1	0	0	0	1	1
1391	*Steel Design*	2	2	0	0	4	3
1394	*Desalination*	2	2	2	0	6	4
1395	*Hydroinformatics*	2	2	0	0	4	3
1397	*Water B Sc Project-2*	2	0	2	0	4	3
1398	*Groundwater Flow*	2	1	1	0	4	3
No. of Courses in the Department: 27	***Partial Sum:***	**50**	**29**	**27**	**3**	**109**	**79**

14 Department of Architecture Engineering

This department scientifically supervises the following group of courses:

Course Code	Course Name	Lec.	Tut.	Lab.	WS	Sum	Credit Hours
1411	*Engineering Drawing*	1	0	4	0	5	3
1420	*Green Design Studio 1*	2	4	0	0	6	4
1421	*Theories of Architecture*	2	0	0	0	2	2
1422	*Green Building Construction 1*	2	2	0	0	4	3
1423	*Computer Aided Design*	2	0	2	0	4	3
1430	*Green Design Studio 2*	2	4	0	0	6	4

1431	*Architecture and Cities in History*	2	0	0	0	2	2
1432	*Green Building Construction 2*	2	2	0	0	4	3
1433	*3D Modeling*	1	0	2	0	3	2
1440	*Green Design Studio 3*	2	4	0	0	6	4
1441	*Theories of Green Architecture*	2	0	0	0	2	2
1442	*Green Building Construction 3*	2	2	0	0	4	3
1443	*Green Design Software*	1	0	4	0	5	3
1444	*Sustainable Urban Design 1*	2	2	0	0	4	3
1445	*Enviromental Control 1*	2	2	0	0	4	3
1448	*Architecture in Field 1*	0	0	0	3	3	1
1450	*Green Design Studio 4*	2	4	0	0	6	4
1454	*Sustainable Urban Design 2*	2	2	0	0	4	3
1455	*Environmental Control 2*	2	2	0	0	4	3
1460	*Green Design Studio 5*	2	4	0	0	6	4
1464	*Sustainable Urban Design 3*	2	2	0	0	4	3
1465	*Working Drawings 1*	2	2	0	0	4	3
1466	*Technical Installation*	1	2	0	0	3	2
1468	*Architecture in Field 2*	0	0	0	3	3	1
1470	*Green Design Studio 6*	2	4	0	0	6	4
1473	*Geographic Information Systems*	2	0	2	0	4	3
1475	*Working Drawing 2*	2	2	0	0	4	3
1481	*Low Cost Green Housing*	2	2	0	0	4	3
1487	*Architecture B Sc Project 1*	2	0	2	0	4	3
1488	*Architecture in Field 3*	0	0	0	3	3	1
1492	*Enviromental Pyschology*	2	2	0	0	4	3
1493	*Sustainable Landscape Design*	2	2	0	0	4	3
1494	*Islamic Architecture*	2	2	0	0	4	3
1495	*Building Economics*	2	2	0	0	4	3
1496	*Ethics and Legislation*	2	2	0	0	4	3
1497	*Architecture B Sc Project 2*	2	0	2	0	4	3
1498	*Energy Simulation Software*	2	2	0	0	4	3
No. of Courses in the Department:	**37**	***Partial Sum:***	**64**	**60**	**18**	**9**	**151**	**106**
No. of Courses in the Faculty:	**124**	***Total:***	**226**	**152**	**98**	**24**	**500**	**359**

7.
Faculty of Engineering Requirements

The faculty requirements study plan contains mandatory courses. These courses represent the essential and general scientific background for all students in the faculty to help them choose the suitable academic program. The following are the data of the faculty requirements courses.

Course Code	Course Name	Pre. Code	Prerequisite	Lec	Tut	Lab	WS	Sum	Credit Hrs
Mandatory Courses								**55**	**Credit Hours**
1101	Communications and IT			2	0	2	0	4	3
1001	General Physics 1			2	1	1	0	4	3
1002	Engineering Mathematics 1			2	2	0	0	4	3
1003	Mechanics 1			2	2	0	0	4	3
1004	Engineering Chemistry			2	1	1	0	4	3
1211	Production Engineering			2	0	0	6	8	4
1411	Engineering Drawing			1	0	4	0	5	3
1011	General Physics 2	1001	General Physics 1	2	1	1	0	4	3
1012	Engineering Mathematics 2	1002	Engineering Mathematic	2	2	0	0	4	3
1013	Mechanics 2	1003	Mechanics 1	2	2	0	0	4	3
1121	Computer Programing	1101	Communications and IT	2	1	1	0	4	3
1022	Engineering Mathematics 3	1012	Engineering Mathematic	2	2	0	0	4	3
1028	Engineering Art			2	0	0	0	2	2
1331	Structure Analysis			2	2	0	0	4	3
2332	Engineering Economics			2	0	0	0	2	2
2450	Project Management			2	2	0	0	4	3
1361	Material Science	1001	General Physics 1	2	2	0	0	4	3
1065	Operational Statistics	1022	Engineering Mathematic	2	2	0	0	4	3
1066	Community Service Training			0	0	0	6	6	2
			Subtotal:	**35**	**22**	**10**	**12**	**79**	**55**

8.
Study Plans For The Academic Programs of Faculty of Engineering

1001 Energy Engineering Program Requirements

Course Code	Course Name	Pre. Code	Prerequisite	Lec	Tut	Lab	WS	Sum	Credit Hrs
Mandatory Courses									**85 Credit Hours**
1122	Electrical Engineering	1011	General Physics 2	2	2	0	0	4	3
1332	Engineering Systems			2	0	2	0	4	3
1133	Thermodaynamics	1001	General Physics 1	2	1	1	0	4	3
1134	Modelling and Simulation			2	0	2	0	4	3
1142	Electronic Circuits	1122	Electrical Engineering	2	2	2	0	6	4
1242	Basics of Mechatronics			2	2	2	0	6	4
1143	Sensors and Measurement	1122	Electrical Engineering	2	0	2	0	4	3
1243	Fluid mechanics	1001	General Physics 1	2	2	2	0	6	4
1244	Control Systems 1			2	2	0	0	4	3
1148	Training in Industry 1			1	0	0	0	1	1
1152	Microprocessor systems	1142	Electronic Circuits	2	0	2	0	4	3
1153	Heat and Mass transfer	1133	Thermodaynamics	2	1	1	0	4	3
1155	Renewable Energy Applicat			2	2	2	0	6	4
1263	Microcontrollers and PLC			2	2	0	0	4	3
1163	Solar Thermal Energy Syst	1133	Thermodaynamics	2	2	2	0	6	4
1168	Training in Industry 2			1	0	0	0	1	1
1171	Aerodynamics	1013	Mechanics 2	2	2	0	0	4	3
1172	Power Electronics	1142	Electronic Circuits	2	1	1	0	4	3
1175	Energy Auditing and Efficie	1155	Renewable Energy Applicat	2	1	1	0	4	3
1182	Electromechanical Energy	1122	Electrical Engineering	2	2	2	0	6	4
1285	Digital Control	1254	Applied Control Technology	2	2	0	0	4	3
1187	Energy B Sc Project 1			2	0	2	0	4	3
1188	Training in Industry 3			1	0	0	0	1	1
1192	Electrical Power Systems	1122	Electrical Engineering	2	2	0	0	4	3
1193	PV Technology	1122	Electrical Engineering	2	2	2	0	6	4
1197	Energy B Sc Project 2			2	0	2	0	4	3
1198	Electric Engineering	1122	Electrical Engineering	2	2	0	0	4	3
1299	Wind Energy Technology	1171	Aerodynamics	2	0	2	0	4	3
			Partial Sum:	**53**	**32**	**32**	**0**	**117**	**85**

Elective Courses — 12 Credit Hours

1027	Social Research and Netwo			2	0	0	0	2	2
1344	Basics of Water Engineerin			2	1	1	0	4	3
1345	Water Resources Engineeri	1344	Basics of Water Engineerin	2	0	2	0	4	3
1254	Applied Control Technology	1244	Control Systems 1	2	2	2	0	6	4
1355	Hydraulics	1243	Fluid mechanics	2	1	1	0	4	3
1473	Geographic Information Sys			2	0	2	0	4	3
1183	Solar Energy in Buildings			2	2	0	0	4	3
1291	Machines and Vibrations	1411	Engineering Drawing	2	2	0	0	4	3
1194	Bioenergy Conversion	1163	Solar Thermal Energy Syst	2	2	0	0	4	3
			Partial Sum:	**18**	**10**	**8**	**0**	**36**	**27**

1002 Mechatronics Engineering Program Requirements

Course Code	Course Name	Pre. Code	Prerequisite	Lec	Tut	Lab	WS	Sum	Credit Hrs

Mandatory Courses — 85 Credit Hours

1122	Electrical Engineering	1011	General Physics 2	2	2	0	0	4	3
1027	Social Research and Netwo			2	0	0	0	2	2
1332	Engineering Systems			2	0	2	0	4	3
1133	Thermodaynamics	1001	General Physics 1	2	1	1	0	4	3
1134	Modelling and Simulation			2	0	2	0	4	3
1242	Basics of Mechatronics			2	2	2	0	6	4
1142	Electronic Circuits	1122	Electrical Engineering	2	2	2	0	6	4
1143	Sensors and Measurement	1122	Electrical Engineering	2	0	2	0	4	3
1243	Fluid mechanics	1001	General Physics 1	2	2	2	0	6	4
1244	Control Systems 1			2	2	0	0	4	3
1248	Training in Industry 1			1	0	0	0	1	1
1152	Microprocessor systems	1142	Electronic Circuits	2	0	2	0	4	3
1252	Applied Mechatronics	1242	Basics of Mechatronics	2	0	2	0	4	3
1153	Heat and Mass transfer	1133	Thermodaynamics	2	1	1	0	4	3
1254	Applied Control Technology	1244	Control Systems 1	2	2	2	0	6	4
1262	Logic Design	1142	Electronic Circuits	2	0	2	0	4	3
1263	Microcontrollers and PLC			2	2	0	0	4	3
1264	Mechatronics System desig	1242	Basics of Mechatronics	2	0	2	0	4	3
1268	Training in Industry 2			1	0	0	0	1	1
1271	Computer Aided Design/ C			2	0	2	0	4	3
1172	Power Electronics	1142	Electronic Circuits	2	1	1	0	4	3
1274	Control Systems 2	1254	Applied Control Technology	2	1	1	0	4	3
1182	Electromechanical Energy	1122	Electrical Engineering	2	2	2	0	6	4
1284	Robotics	1274	Control Systems 2	2	1	1	0	4	3
1287	Mechatronics B SC Project			2	0	2	0	4	3

1288	Training in Industry of mech			1	0	0	0	1	1
1291	Machines and Vibrations	1411	Engineering Drawing	2	2	0	0	4	3
1294	Actuators and Drives	1244	Control Systems 1	2	1	1	0	4	3
1297	Mechatronics B Sc Project			2	0	2	0	4	3
			Partial Sum:	**55**	**24**	**36**	**0**	**115**	**85**

Elective Courses — 12 Credit Hours

1344	Basics of Water Engineerin			2	1	1	0	4	3
1345	Water Resources Engineeri	1344	Basics of Water Engineerin	2	0	2	0	4	3
1355	Hydraulics	1243	Fluid mechanics	2	1	1	0	4	3
1473	Geographic Information Sys			2	0	2	0	4	3
1285	Digital Control	1254	Applied Control Technology	2	2	0	0	4	3
1292	Automation Technology	1262	Logic Design	2	2	0	0	4	3
1294	Robotics Control Systems	1284	Robotics	2	2	0	0	4	3
			Partial Sum:	**14**	**8**	**6**	**0**	**28**	**21**

1003 Water Engineering Program Requirements

Course Code	Course Name	Pre. Code	Prerequisite	Lec	Tut	Lab	WS	Sum	Credit Hrs

Mandatory Courses — 85 Credit Hours

1122	Electrical Engineering	1011	General Physics 2	2	2	0	0	4	3
1423	Computer Aided Design	1411	Engineering Drawing	2	0	2	0	4	3
1027	Social Research and Netwo			2	0	0	0	2	2
1332	Engineering Systems			2	0	2	0	4	3
1333	Hydrology 1			2	1	1	0	4	3
1134	Modelling and Simulation			2	0	2	0	4	3
1143	Sensors and Measurement	1122	Electrical Engineering	2	0	2	0	4	3
1243	Fluid mechanics	1001	General Physics 1	2	2	2	0	6	4
1344	Basics of Water Engineerin			2	1	1	0	4	3
1444	Sustainable Urban Design			2	2	0	0	4	3
1348	Training in Field 1			1	0	0	0	1	1
1351	Reinforced Concrete 1			2	2	2	0	6	4
1353	Hydrology 2	1333	Hydrology 1	2	1	1	0	4	3
1354	Water Engineering Project	1344	Basics of Water Engineerin	1	0	2	3	6	3
1355	Hydraulics	1243	Fluid mechanics	2	1	1	0	4	3
1364	Plant Water Relationship in			2	2	0	0	4	3
1368	Training in Field 2			1	0	0	0	1	1
1473	Geographic Information Sys			2	0	2	0	4	3
1374	Sanitary Engineering	1344	Basics of Water Engineerin	2	1	1	0	4	3
1375	Irrigation and Drainage Syst	1353	Hydrology 2	2	1	1	0	4	3
1376	Soil Mechanics			2	2	2	0	6	4
1381	Reinforced Concrete 2	1351	Reinforced Concrete 1	2	2	2	0	6	4

1384	Waste Water Treatment	1374	Sanitary Engineering	2	1	1	0	4	3
1385	Irrigation Management	1375	Irrigation and Drainage Syst	2	1	1	0	4	3
1387	Water B Sc Project 1			2	0	2	0	4	3
1388	Training in Field 3			1	0	0	0	1	1
1394	Desalination	1344	Basics of Water Engineerin	2	2	2	0	6	4
1395	Hydroinformatics	1353	Hydrology 2	2	2	0	0	4	3
1397	Water B Sc Project-2			2	0	2	0	4	3
			Partial Sum:	**54**	**26**	**34**	**3**	**117**	**85**

Elective Courses — 12 Credit Hours

1345	Water Resources Engineeri	1344	Basics of Water Engineerin	2	0	2	0	4	3
1183	Solar Energy in Buildings			2	2	0	0	4	3
1391	Steel Design	1331	Structure Analysis	2	2	0	0	4	3
1492	Enviromental Pyschology			2	2	0	0	4	3
1495	Building Economics			2	2	0	0	4	3
1398	Groundwater Flow	1353	Hydrology 2	2	1	1	0	4	3
			Partial Sum:	**12**	**9**	**3**	**0**	**24**	**18**

1004ɜn Architecture Engineering Program Requirements

Course Code	Course Name	Pre. Code	Prerequisite	Lec	Tut	Lab	WS	Sum	Credit Hrs

Mandatory Courses — 85 Credit Hours

1420	Green Design Studio 1	1411	Engineering Drawing	2	4	0	0	6	4
1421	Theories of Architecture			2	0	0	0	2	2
1422	Green Building Constructio	1411	Engineering Drawing	2	2	0	0	4	3
1423	Computer Aided Design	1411	Engineering Drawing	2	0	2	0	4	3
1430	Green Design Studio 2	1420	Green Design Studio 1	2	4	0	0	6	4
1431	Architecture and Cities in	1421	Theories of Architecture	2	0	0	0	2	2
1432	Green Building Constructio	1422	Green Building Constructio	2	2	0	0	4	3
1433	3D Modeling			1	0	2	0	3	2
1440	Green Design Studio 3	1430	Green Design Studio 2	2	4	0	0	6	4
1441	Theories of Green Architect	1421	Theories of Architecture	2	0	0	0	2	2
1442	Green Building Constructio	1422	Green Building Constructio	2	2	0	0	4	3
1443	Green Design Software	1423	Computer Aided Design	1	0	4	0	5	3
1444	Sustainable Urban Design			2	2	0	0	4	3
1445	Enviromental Control 1			2	2	0	0	4	3
1448	Architecture in Field 1			0	0	0	3	3	1
1450	Green Design Studio 4	1440	Green Design Studio 3	2	4	0	0	6	4
1454	Sustainable Urban Design	1444	Sustainable Urban Design	2	2	0	0	4	3
1455	Environmental Control 2	1445	Enviromental Control 1	2	2	0	0	4	3
1460	Green Design Studio 5	1450	Green Design Studio 4	2	4	0	0	6	4
1362	Reinforced Concrete & Ste	1331	Structure Analysis	2	2	0	0	4	3

1464	Sustainable Urban Design	1454	Sustainable Urban Design	2	2	0	0	4	3
1465	Working Drawings 1			2	2	0	0	4	3
1466	Technical Installation			1	2	0	0	3	2
1468	Architecture in Field 2			0	0	0	3	3	1
1470	Green Design Studio 6	1460	Green Design Studio 5	2	4	0	0	6	4
1473	Geographic Information Sys			2	0	2	0	4	3
1475	Working Drawing 2	1465	Working Drawings 1	2	2	0	0	4	3
1487	Architecture B Sc Project 1			2	0	2	0	4	3
1488	Architecture in Field 3			0	0	0	3	3	1
1497	Architecture B Sc Project 2			2	0	2	0	4	3
			Partial Sum:	**51**	**48**	**14**	**9**	**122**	**85**

Elective Courses — 12 Credit Hours

1027	Social Research and Netwo			2	0	0	0	2	2
1345	Water Resources Engineeri	1344	Basics of Water Engineerin	2	0	2	0	4	3
1481	Low Cost Green Housing			2	2	0	0	4	3
1183	Solar Energy in Buildings			2	2	0	0	4	3
1492	Enviromental Pyschology			2	2	0	0	4	3
1493	Sustainable Landscape De	1454	Sustainable Urban Design	2	2	0	0	4	3
1494	Islamic Architecture			2	2	0	0	4	3
1495	Building Economics			2	2	0	0	4	3
1496	Ethics and Legislation			2	2	0	0	4	3
1498	Energy Simulation Software			2	2	0	0	4	3
			Partial Sum:	**20**	**16**	**2**	**0**	**38**	**29**
			Total:	**277**	**173**	**135**	**12**	**597**	**435**

Statistics:

The percentage of the lecture hours to the total contact hours:	**46.4%**
The percentage of the tutorial hours to the total contact hours:	**29.0%**
The percentage of the laboratory hours to the total contact hours:	**22.6%**
The percentage of the workshop hours to the total contact hours:	**2.0%**